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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,198	11/17/2003	Hung Van Nguyen	79-03A	4124
23713	7590	06/22/2006		
GREENLEE WINNER AND SULLIVAN P C 4875 PEARL EAST CIRCLE SUITE 200 BOULDER, CO 80301			EXAMINER CINTINS, IVARS C	
			ART UNIT	PAPER NUMBER
			1724	

DATE MAILED: 06/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/716,198

Applicant(s)

NGUYEN ET AL.

Examiner

Ivars C. Cintins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9,11,13-29,31-37 and 44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9,11,13-29,31-37 and 44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 8, 11, 13-17, 19, 20, 22-29, 31-33, 35-37 and 44 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Jowett et al. (U.S. Patent No. 4,154,675; hereinafter "Jowett") in view of Weiss et al. (U.S. Patent No. 3,560,378; hereinafter "Weiss"). Jowett discloses removing organic carbon from water by dispersing an ion exchange resin into the water, separating the resin from the resultant mixture, and regenerating the resin with brine for reuse (see col. 11, lines 57-60; and col. 12, lines 13-15). This reference further discloses that the water can be subjected to additional treatments of the type recited (see col. 7, lines 42-44; and col. 8, lines 28-30). Accordingly, Jowett discloses the claimed invention with the exception of the use of magnetic ion exchange resin particles. Weiss discloses magnetic ion exchange resin particles of the type recited; and it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the magnetic ion exchange resin particles of the secondary reference for the ion exchange resin particles of the primary reference, in order to enable separation of the resin from the treated water by magnetic means.

Claims 7 and 18 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Jowett and Weiss as applied above, and further in view of Carlson et al. (U.S. Patent No. 4,670,154; hereinafter "Carlson"). The modified primary reference

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discloses the claimed invention with the exception of the recited vacuum collection step. Carlson teaches (col. 3, lines 19-22) that it is known to transfer ion exchange resins utilizing a vacuum generating device. It would have been obvious to one of ordinary skill in the art at the time the invention was made to transfer the resin of the modified primary reference in the manner taught by Carlson, in order to obtain the advantages disclosed by this secondary reference for the system of the modified primary reference.

Claims 9 and 21 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Jowett and Weiss as applied above, and further in view of Corne et al. (U.S. Patent No. 1,190,863; hereinafter "Corne"). The modified primary reference discloses the claimed invention with the exception of the recited tilted plates. Corne discloses (see Fig. 9) a settling tank having a series of tilted plates. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the settling tank of the secondary reference for the settler of the modified primary reference (see col. 8, line 30 of Jowett et al.), since this secondary reference settling tank is capable of separating solids from a liquid in substantially the same manner as the settler of the modified primary reference, to produce substantially the same results.

Claim 34 is again rejected under 35 U.S.C. 103(a) as being unpatentable over Jowett and Weiss as applied above, and further in view of Bacchus et al. (U.S. Patent No. 6,110,375; hereinafter "Bacchus"). The modified primary reference discloses the claimed invention with the exception of the recited membrane treatment. Bacchus teaches purifying water with an ion exchange resin, and subsequently subjecting the

water to a treatment by a membrane filter (see col. 2, lines 50-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to subject the ion exchange resin treated water of the modified primary reference to a membrane filtration treatment, as suggested by Bacchus, in order to further purify this water.

Applicant's arguments filed May 22, 2006 have been noted and carefully considered but are not deemed to be persuasive of patentability. Applicant argues that the Jowett process would not be considered suitable for treating domestic water because raw water does not contain significant amounts of the proteins, fats and large organic molecules for which the Jowett process was designed. Applicant has also supplied a publication (Exhibit A) to show that raw water contains a very small amount of the large organic molecules specified above. It is pointed out, however, that although the Jowett process can be used to remove proteins, fats and large organic molecules from a liquid, this reference process can also be used to remove other dissolved organic materials (e.g. dyestuffs) which would be present in raw water (see col. 3, lines 46-56). In any event, Jowett clearly discloses that its process can be used "for purification purposes, for example, extraction of organic pollutants from waste effluents, or purification of water for domestic use" (see col. 4, lines 1-3). Accordingly, this reference is deemed to suggest the treatment of raw water to produce potable water, as now recited in all of the claims in this application.

Applicant also argues that it would not have been obvious to substitute the ion exchange resin of Weiss for the ion exchange material of Jowett. Again, this argument has been noted and carefully considered, but is not deemed to be persuasive of

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patentability. It is pointed out that since the ion exchange resins of Weiss contain ion exchange groups, one of ordinary skill in the fluid purification art would readily recognize that these secondary reference ion exchange resins would be capable of removing the polyelectrolytes and other large ions of the primary reference (see col. 4, lines 10-15 of Jowett) from water in substantially the same manner as the ion exchange material of this primary reference, to produce substantially the same results. The fact that the ion exchange resins of Weiss are more highly crosslinked than the cellulosic material of Jowett is not deemed to be relevant. Applicant should note that Jowett cautions against crosslinking cellulose to an extent greater than 10% because such additional crosslinking would reduce the extent to which the ion exchange groups of the cellulose would be accessible (see col. 4, lines 6-15). Since the ion exchange resins disclosed by Weiss are not based on cellulose, this warning by Jowett is not deemed to be relevant to these secondary reference ion exchange resins.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to I. Cintins whose telephone number is 571-272-1155. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Duane Smith, can be reached at 571-272-1166.

The centralized facsimile number for the USPTO is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).



**Ivars C. Cintins**  
**Primary Examiner**  
**Art Unit 1724**

I. Cintins  
June 20, 2006